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SMSYZ¹WTGALITPCGPEEEEKLPI~~X~~¹PLSNSL~~X~~²RFHNKVYSTTSRSASLRAKKVTFDRVQV
LDAHYSVLQDVKRAASKVSARLLTVEEACALTPPHSAKSRYGFGAKEVRSLSRRAVNHIR
SVWEDLLEDQHTPIDTTIMAKNEVFCIDPTKGGKKPARLIVYPDLGVRVCEKMALYDIAQK
LPKAIMGPSYGFQYSPAERVDFLLKAWGSKKDPMGFSYDTRCFDSTVTERDIRTEESYQA
CSLPQEARTVIHSLTERLYVGGPMTNSKGQSCGYRRCRASGVFTTSMGNTMTCYIKALAAC
KAAGIVDPVMLVCGDDL VVISESQGNEEDERNLRAFTEAMTRYSAAPPGDLP RPEYDLELIT
SCSSNVSVALDSRGRRRYFLTRDPTTP~~X~~³TRAAWETVRHSPVNSWLGNIIQYAPTIWVRMVI
MTHFFSILLAQDTLNQNLNFEMYGAVYSVNPLDLPAI IERLHGLEAFSLHTYSPHEL SRVA
ATLRKLGAPPLRAWKSRARAVRASLIAQGARA AICGRYLFNWAVKTKLKL TPLPEASRLDL
SGWFTVGAGGGDIYHSVSHARPRLLLLCLLLLSVGVGIFLLPDR

FIG. 1

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TCY¹ATGTCY²TACY³CY⁴TGGACY⁵GGY⁶GCCY⁷TY⁸ATY⁹ACACCATGTGGGCCCCGAAGAGG
AGAAGTTACCGATCAX¹CCCTCTGAGTAATTCGCTCATX²CGGTTCCATAATAAGGTGTACT
CCACAACCTCGAGGAGTGCCTCTCTGAGGGCAAAGAAGGTGACTTTTGACAGGGTGCAGGT
GCTGGACGCACACTATGACTCAGTCTTGCAGGACGTTAAGCGGGCCGCCTCTAAGGTTAGT
GCGAGGCTCCTCACGGTAGAGGAAGCCTGCGCGCTGACCCCGCCCCACTCCGCCAAATCGC
GATACGGATTTGGGGCAAAGAGGTGCGCAGCTTATCTAGGAGGGCCGTTAACCACATCCG
GTCCGTGTGGGAGGACCTCCTGGAAGACCAACATAACCCCAATTGACACAACATCATGGCT
AAAAATGAGGTGTTCTGCATTGATCCAACATAAAGGTGGGAAAAAGCCAGCTCGCCTCATCG
TATACCCCGACCTTGGGGTCAGGGTGTGCGAAAAGATGGCCCTCTATGACATCGCACAAAA
GCTTCCCAAAGCGATAATGGGGCCATCCTATGGGTTCCAATACTCTCCCGCAGAACGGGTC
GATTTCTCCTCAAAGCTTGGGGAAGTAAGAAGGACCCAATGGGGTTCTCGTATGACACCC
GCTGCTTTGACTCAACCGTCACGGAGAGGGACATAAGAACAGAAGAATCCATATATCAGGC
TTGTTCTCTGCCTCAAGAAGCCAGAACTGTCATACTCGCTCACTGAGAGACTTTACGTA
GGAGGGCCCATGACAAACAGCAAAGGGCAATCCTGCGGCTACAGGCGTTGCCGCGCAAGCG
GTGTTTTACACCACCAGCATGGGGAATACCATGACATGTTACATCAAAGCCCTTGCAGCGTG
TAAGGCTGCAGGGATCGTGGACCCTGTTATGTTGGTGTGTGGAGACGACCTGGTCTGTCATC
TCAGAGAGCCAAGGTAACGAGGAGGACGAGCGAAACCTGAGAGCTTTCACGGAGGCTATGA
CCAGGTATTCGCCCCCTCCCGGTGACCTTCCCAGACCGGAATATGACTTGGAGCTTATAAC
ATCCTGCTCCTCAAACGTATCGGTAGCGCTGGACTCTCGGGGTGCGCCGCCGGTACTTCCTA
ACCAGAGACCCTACCACTCCA³TCACCCGAGCTGCTTGGGAAACAGTAAGACACTCCCCTG
TCAATTCTTGGCTGGGCAACATCATCCAGTACGCCCCCACAATCTGGGTCCGGATGGTCAT
AATGACTCACTTCTTCTCCATACTATTGGCCCAGGACACTCTGAACCAAAATCTCAATTTT
GAGATGTACGGGGCAGTATACTCGGTCAATCCATTAGACCTACCGGCCATAATTGAAAGGC
TACATGGGCTTGAAGCCTTTTCACTGCACACATACTCTCCCCACGAACTCTCACGGGTGGC
AGCAACTCTCAGAAAACCTTGGAGCGCCTCCCCTTAGAGCGTGGAAGAGTCGGGCGCGTGCC
GTGAGAGCTTCACTCATCGCCCAAGGAGCGAGGGCGGCCATTTGTGGCCGCTACCTCTTCA
ACTGGGCGGTGAAAACAAAGCTCAAACCTCACTCCATTGCCCCGAGGCGAGCCGCCTGGATTT
ATCCGGGTGGTTCACCGTGGGCGCCGGCGGGGGCGACATTTATCACAGCGTGTGCGCATGCC
CGACCCCGCCTATTACTCCTTTGCCTACTCCTACTTAGCGTAGGAGTAGGCATCTTTTAC
TCCCCGATCGATGA

FIG. 2

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MAPITAYSQQTRGLLGCIITSLTGRDKNQVEGEVQVVSTATQSFLATCVNGVCWTVYHGAG
SKTLAGPKGPITQMYTNVDQDLVGWQAPPGARSLTPCTCGSSDLYLVTRHADVIPVRRRGD
SRGSLSPRPVSYLKGSSGGPLLCPSGHAVGIFRAAVCTRGVAKAVDFVPVESMETTMRSP
VFTDNSSPPAVPQTFQVAHLHAPTGS GKSTKVPAAAYAAQGYKVLVLNPSVAATLGFGAYMS
KAHGIDPNIRTGVRTITTTGAPVTYSTY GKFLADGGCSGGAYDIIICDECHSTDSTTILGIG
TVLDQAETAGARLVVLATATPPGSVTVPHPNIEEVALSNTGEIPFYGKAIPIEAIRGGRHL
IFCHSKKKCDELAALKSLGLGINAVAYYRGLDVSVIPPTIGDVVVVATDALMTGYTGDFDSVI
DCNTCVTQTVD FSLDPTFTIETTTVPQDAVSRSQRRGRTRGRMG IYRFVTPGERPSGMFD
SSVLCECYDAGCAWYELTPAETSVRLRAYLNTPGLPVCQDHLEFWESVFTGLTHIDAHFLS
QTKQAGDNFPYLVAYQATVCARAQAPPPSWDQMWKCLIRLKP TLHGPTPLLYRLGAVQNEV
TLTHPITKYIMACMSADLEVVTSTWVLVGGVLAALAAAYCLTTG SVVIVGRIILSGRPAIVP
DREFLYQEFDEMEECASHLPYIEQGMQLAEQFKQKALG LLQTATKQAEAAAPVVESKWRAL
ETFWAKHMMWNFISGIQYLAGLSTLPGNPAIASLMAFTASITSPLTTQSTLLFNILGGWVAA
QLAPPSAASAFVGAGIAGAAVGSIGLGKVLVDILAGYGAGVAGALVAFKVMSGEMPSTEDL
VNLLPAILSPGALVVG VVCAAILRRHVGPGE GAVQWMNRLIAFASRGNH²SPTHYVPESDA
AARVTQILSSLTITQLLKRLHQWINEDCSTPCSGSWLRD VWDWICTVLTDFKTWLQSKLLP
QLPGVPFFSCQRGYKGVWRGDGIMQTTCPGQAQITGHVKNGSMRIVGPKTCSNTWHGTFPI
NAYTTGPCTPSPAPNYSRALWRVAAEEYVEVTRVGDFHYVTGMTTDNVKPCQVPAP EFFT
EVDGVRLHRYAPACRPLLREEVTFQVGLNQYLVGSQ L PCEPEPDVAVLTSMLTDPSHITAE
TAKRRLARGSPPSLASSSAIQLSAPSLKATCTTHHVSPDADL IEANLLWRQEMGG¹ITRVE
SENKVVVLDSFDPLRAEEDEREVSVP AEILRKSKKFPAAMPIWARPDYNPPLLESWKDPDY
VPPVVHGCPLPPIKAPPIPPPRRKRTVVLTESSVSSALAE LATKTFGSSESSAVDSGTATA
LPDQASDDGDKGSDVESYSSMPPLEGEPGDPDLS DGSWSTVSEEASEDVVCC

FIG. 3

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ATGGCGCCCATCACGGCCTACTCCCAACAGACGCGGGGCCTACTTGGTTGCATCATCACTA
GCCTTACAGGCCGGGACAAGAACCAGGTGAGGGAGAGGTTTCAGGTGGTTTCCACCGCAAC
ACAATCCTTCTCTGGCGACCTGCGTCAACGGCGTGTTGGACCGTTTACCATGGTGCTGGC
TCAAAGACCTTAGCCGGCCCAAAGGGGCCAATCACCCAGATGTACACTAATGTGGACCAGG
ACCTCGTCGGCTGGCAGGCGCCCCCGGGGCGCGTTCCCTTGACACCATGCACCTGTGGCAG
CTCAGACCTTTACTTGGTCACGAGACATGCTGACGTCATTCCGGTGCGCCGGCGGGGCGAC
AGTAGGGGGAGCCTGCTCTCCCCCAGGCCTGCTCTCTTACTTGAAGGGCTCTTCGGGTGGTC
CACTGCTCTGCCCTTCGGGGCACGCTGTGGGCATCTTCCGGGCTGCCGTATGCACCCGGGG
GGTTGCGAAGGCGGTGGACTTTGTGCCCGTAGAGTCCATGGAACTACTATGCGGTCTCCG
GTCTTCACGGACAACATCATCCCCCGGCCGTACCGCAGACATTTCAAGTGGCCACCTAC
ACGCTCCCCTGAGCAGCGGCAAGAGTACTAAAGTGCCGGCTGCATATGCAGCCCAAGGGTA
CAAGGTGCTCGTCCTCAATCCGTCCGTGGCCGTACCTTAGGGTTTGGGGCGTATATGTCT
AAGGCACACGGTATTGACCCCAACATCAGAACTGGGGTAAGGACCATTACCACAGGCGCCC
CCGTCACATACTCTACCTATGGCAAGTTTCTTGCCGATGGTGGTTGCTCTGGGGGCGCTTA
TGACATCATAATATGTGATGAGTGCCATTCAACTGACTCGACTACAATCTTGGGCATCGGC
ACAGTCCTGGACCAAGCGGAGACGGCTGGAGCGCGGCTTGTCGTGCTCGCCACCGCTACGC
CTCCGGGATCGGTACCGTGCCACACCCAAACATCGAGGAGGTGGCCCTGTCTAATACTGG
AGAGATCCCCCTTCTATGGCAAAGCCATCCCCATTGAAGCCATCAGGGGGGGAAGGCATCTC
ATTTTCTGTCAATCCAAGAAGAAGTGCGACGAGCTCGCCGCAAAGCTGTCAGGCCTCGGAA
TCAACGCTGTGGCGTATTACCGGGGGCTCGATGTGTCCGTCATACTAATATCGGAGACGT
CGTTGTGCTGGCAACAGACGCTCTGATGACGGGCTATACGGGCGACTTTGACTCAGTGATC
GACTGTAACACATGTGTCACCCAGACAGTCGACTTCAGCTTGATCCCACCTTCACCATTG
AGACGACGACCGTGCCCTCAAGACGCAGTGTGCGCTCGCAGCGGCGGGGTAGGACTGGCAG
AGGTAGGATGGGCATCTACAGGTTTGTGACTCCGGGAGAACGGCCCTCGGGCATGTTTCGAT
TCCTCGGTCTGTGTGAGTGCTATGACGCGGGCTGTGCTTGGTACGAGCTCACCCCCGCCG
AGACCTCGGTTAGGTTGCGGGCCTACCTGAACACACCAGGGTTGCCCGTTTGCCAGGACCA
CCTGGAGTTCTGGGAGAGTGCTTTCACAGGCCTCACCCACATAGATGCACACTTCTTGTC
CAGACCAAGCAGGCAGGAGACAACCTTCCCTACCTGGTAGCATACTAAGCCACGGTGTGCG
CCAGGGCTCAGGCCCCACCTCCATCATGGGATCAAATGTGGAAGTGTCTCATACTGGCTGAA
ACCTACGCTGCACGGGCCAACACCCCTTGCTGTACAGGCTGGGAGCCGTCCTCAAATGAGGTC
ACCCTCACCCACCCATAACCAAATACATCATGGCATGCATGTGCGCTGACCTGGAGGTCTG
TCACTAGCACCTGGGTGCTGGTGGGCGGAGTCCTTGCAGCTCTGGCCGCGTATTGCCTGAC
AACAGGCAGTGTGGTCATTGTGGGTAGGATTATCTTGTCCGGGAGGCCGGCTATTGTTCCC
GACAGGGAGTTTCTCTACCAGGAGTTCGATGAAATGGAAGAGTGCGCCTCGCACCTCCCTT
ACATCGAGCAGGGAATGCAGCTCGCCGAGCAATTCAAGCAGAAAGCGCTCGGGTTACTGCA
AACAGCCACCAAACAAGCGGAGGCTGCTGCTCCCGTGGTGGAGTCCAAGTGGCGAGCCCTT
GAGACATTCTGGGCGAAGCACATGTGGAATTTTCATCAGCGGGATACAGTACTTAGCAGGCT
TATCCACTCTGCCTGGGAACCCCGCAATAGCATCATTTGATGGCATTCACAGCCTCTATCAC
CAGCCCGCTCACCAACCAAAGTACCTCCTGTTTAAACATCTTGGGGGGGTGGGTGGCTGCC
CAACTCGCCCCCCCCAGCGCCGCTTCGGCTTTCGTGGGCGCCGGCATCGCCGGTGCGGCTG
TTGGCAGCATAGGCCTTGGGAAGGTGCTTGTGGACATTCTGGCGGGTTATGGAGCAGGAGT
GGCCGGCGCGCTCGTGGCCTTCAAGGTCATGAGCGGCGAGATGCCCTCCACCGAGGACCTG
GTCAATCTACTTCTTCCATCCTCTCTCTTGGCGCCCTGGTCGTGGGGTGTGTGTGCAG
CAATACTGCGTCGACACGTGGGTCCGGGAGAGGGGGCTGTGCAGTGGATGAACCGGCTGAT
AGCGTTCGCCTCGCGGGGTAATCATG^{x2}TTCCCCCACGCACTATGTGCCTGAGAGCGACGCC
GCAGCGCGTGTACTCAGATCCTCTCCAGCCTTACCATCACTCAGCTGCTGAAAAGGCTCC
ACCAGTGGATTAAATGAAGACTGCTCCACACCGTGTTCCGGCTCGTGGCTAAGGGATGTTTG
GGACTGGATATGCACGGTGTGACTGACTTCAAGACCTGGCTCCAGTCCAAGCTCCTGCCG

FIG. 4A

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CAGCTACCGGGAGTCCCTTTTTTCTCGTGCCAACGCGGGGTACAAGGGAGTCTGGCGGGGAG
ACGGCATCATGCAAACCACCTGCCCATGTGGAGCACAGATCACCGGACATGTCAAAAACGG
TTCCATGAGGATCGTCGGGCCTAAGACCTGCAGCAACACGTGGCATGGAACATTCCCCATC
AACGCATACACCACGGGGCCCCTGCACACCCTCTCCAGCGCCAAACTATTCTAGGGCGCTGT
GGCGGGTGGCCGCTGAGGAGTACGTGGAGGTCACGCGGGTGGGGGATTTCCACTACGTGAC
GGGCATGACCACCTGACAACGTAAAGTGCCCATGCCAGGTTCCGGCTCCTGAATTCTTCACG
GAGGTGGACGGAGTGCGGTTGCACAGGTACGCTCCGGCGTGCAGGCCTCTCCTACGGGAGG
AGGTTACATTCCAGGTCTGGGCTCAACCAATACCTGGTTGGGTCACAGCTACCATGCGAGCC
CGAACCGGATGTAGCAGTGCTCACTTCCATGCTCACCGACCCCTCCACATCACAGCAGAA
ACGGCTAAGCGTAGGTTGGCCAGGGGGTCTCCCCCTCCTTGGCCAGCTCTTCAGCTATCC
AGTTGTCTGCGCCTTCCTTGAAGGCGACATGCACTACCCACCATGTCTCTCCGGACGCTGA
CCTCATCGAGGCCAACCTCCTGTGGCGGCAGGAGATGGGCGGGAX¹CATCACCCGCGTGGAG
TCGGAGAACAAGGTGGTAGTCCTGGACTCTTTCGACCCGCTTCGAGCGGAGGAGGATGAGA
GGGAAGTATCCGTTCGGGCGGAGATCCTGCGGAAATCCAAGAAGTTCCCCGCAGCGATGCC
CATCTGGGCGCGCCCGGATTACAACCCTCCACTGTTAGAGTCCTGGAAGGACCCGGACTAC
GTCCCTCCGGTGGTGCACGGGTGCCCGTTGCCACCTATCAAGGCCCTCCAATACCACCTC
CACGGAGAAAGAGGACGGTTGTCCTAACAGAGTCCTCCGTGTCTTCTGCCTTAGCGGAGCT
CGCTACTAAGACCTTCGGCAGCTCCGAATCATCGGCCGTCGACAGCGGCACGGCGACCGCC
CTTCCTGACCAGGCCTCCGACGACGGTGACAAAGGATCCGACGTTGAGTCGTACTCCTCCA
TGCCCCCCTTGAGGGGGGAACCGGGGGACCCCGATCTCAGTGACGGGTCTTGGTCTACCGT
GAGCGAGGAAGCTAGTGAGGATGTCGTCTGCTGC

FIG. 4B

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GCCTCCAAAGCCGCCCTCATTGAGGAAGGGCAGCGGATGGCGGAGATGCTCAAATCTAAGATACAAGGCCTCCT
ACAACAGGCCACAAGGCAAGCTCAAGACATACAGCCAGCTATACAGTCATCATGGCCCAAGCTTGAACAATTTT
GGGCCAAACACATGTGGAAC TTCATCAGTGGTATACAGTACCTAGCAGGACTCTCCACCCTACCGGGAAATCCT
GCAGTAGCATCAATGATGGCTTTTAGCGCCGCGCTGACTAGCCCACTACCCACCAGCACCACCATCCTCTTGAA
CATCATGGGAGGATGGTTGGCCTCTCAGATTGCCCCCCTGCCGGAGCCACTGGCTTCGTTGTCAGTGGTCTAG
TGGGGGCGGCCGTCGGAAGCATAGGCCTGGGTAAGATACTGGTGGACGTTTTGGCCGGGTACGGCGCAGGCATT
TCAGGGGCCCTCGTAGCTTTTAAGATCATGAGCGGCGAGAAGCCACGGTAGAAGACGTTGTGAATCTCCTGCC
TGCTATTCTGTCTCCTGGTGCCTTGGTAGTGGGAGTCATCTGTGCAGCAATCCTGCGTCGACACGTGGGTCCGG
GAGAGGGGGCTGTGCAGTGGATGAACCGGCTGATAGCGTTCGCCCTCGCGGGGTAATCATGCTTCCCCCACGCAC
TATGTGCCTGAGAGCGACGCCGCAGCGCTGTTACTCAGATCCTCTCCAGCCTTACCATCACTCAGCTGCTGAA
AAGGCTCCACCAGTGGATTAATGAAGACTGCTCCACACCGTGT

FIG. 5A

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ASKAALIEEGORMAEMLKSKIQGLLQQATRQAQDIQPAIQSSWPKLEQFWAKHMWNFISGIQYLAGLSTLPGNP
AVASMMAFSAALTSPLPTSTTILLNIMGWLASQIAPPAGATGFVVSGLVGAAVGSIGLGKILVDVLGYGAGI
SGALVAFKIMSGEKPTVEDVVNLLPAILSPGALVGVICAAILRRHVGPGEAVQWMNRLIAFASRGNHASPTH
YVPESDAAARVTQILSSLTITQLLKRLHQWINEDCSTPC

FIG. 5B